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AUTHOR Bomia, Lisa; Beluzo, Lynne; Demeester, Debra; Elander, Keli; Johnson, Mary; Sheldon, Betty

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ABSTRACT

This paper examines intrinsic motivation by reviewing various motivational theories and models and discussing whether research supports the hypothesis that teaching strategies can influence intrinsic motivation. Intrinsic motivation, also known as self-motivation, refers to influences that originate from within a person which cause a person to act or learn. This includes self-concept, self-esteem, self-satisfaction, personal values, and personal/emotional needs and drives. The paper focuses on the theories and models of Biddle, Goudas, and Underwood (1995); Hancock (1995); Keller (1979); Bohlin, Milheim, and Viechnicki (1993); and Bandura (1986) and Pajares (1996), noting the various concepts developed to explain their theories and models. Teaching strategies to support the various concepts are suggested as ways to impact intrinsic motivation in the learner. Various components or concepts of intrinsic motivation revealed through the research include autonomy, expectancy, instrumentality, effort, interest, satisfaction, valence, relevance, and self-efficacy. In examining these concepts and the teaching strategies associated with them, it was determined that specific teaching strategies can have a positive effect on the various concepts related to intrinsic motivation. Teachers must be aware of strategies that will positively affect motivation, using an approach that reinforces student willingness and enthusiasm. (Contains 21 references.) (Author/SM)

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Running head: THE IMPACT OF TEACHING STRATEGIES

The Impact of Teaching Strategies on Intrinsic Motivation

Lisa Bomia

Lynne Beluzo

Debra Demeester

Keli Elander

Mary Johnson

Betty Sheldon

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Abstract

The purpose of this paper is to examine intrinsic motivation by reviewing a number of motivational theories and models and discussing whether research supports the hypothesis that teaching strategies can influence intrinsic motivation. The theories and models of Biddle, Goudas, and Underwood (1995); Hancock (1995); Keller (1979); Bohlin, Milheim, and Viechnicki (1993); and Bandura (1986) and Pajares (1996), and the various the concepts developed to explain their theories and models, are discussed. Teaching strategies supporting the various concepts are suggested as ways to impact intrinsic motivation in the learner. As a result, the findings of research in this paper strongly suggest validation of the hypothesis that teaching strategies can impact intrinsic motivation in the learner.

The Impact of Teaching Strategies on Intrinsic Motivation

Motivation refers to the magnitude and direction of behavior; it refers to the choices people make as to what experiences or goals they will approach or avoid and the degree of effort they will exert in that respect. In relation to education, motivation refers to a student's willingness, need, desire and compulsion to participate in, and be successful in, the learning process; it seeks to increase the factors that move a student toward becoming more involved in the class and the subject matter. This paper will consider motivation as it pertains to the learner.

Because of human complexity, there is more than one way to motivate learning. In fact, a host of psychological theories, models, methods and factors have been suggested, tested and used at various times and in various settings. However, these numerous motivational approaches can be categorized into two broad groups, extrinsic and intrinsic motivation.

Extrinsic motivation refers to outside sources or values that influence a person to act or learn. Examples of these outside sources are rewards; positive or negative outcomes; and comfort or discomfort. As long as this external source provides the sufficient incentives or conditions, learning can take place. However, once the external input stops or no longer provides sufficient value to the student, then the willingness and effort to learn will also stop.

Intrinsic motivation, also known as self-motivation, refers to influences that originate from within a person which cause a person to act or learn. Examples of these influences are one's self-concept, self-esteem, self-satisfaction, personal values, and

personal/emotional needs and drives. Self -motivation can lead the student to go beyond the scope and requirements of and educational course because they are seeking to learn about the subject, not just fulfill a limited set of requirements. It can also encourage learning even when there is little or no external reinforcements (external motivation) to learn and even in the face of obstacles and setbacks to learning.

Since teachers seek to motivate students to learn, they can use strategies that utilize either or both of these types of motivation. This paper seeks to examine the second category, intrinsic motivation, by reviewing a number of motivational theories and models and discussing whether these theories and research support the hypothesis that teaching strategies can significantly impact intrinsic motivation.

Intrinsic Motivation and the Learner

Biddle, Goudas, & Underwood (1995)

This study examined determinants of intrinsic motivation in a physical education course for future teachers. The theoretical basis for this study was prompted by Bissonnette and Vallerand (1992), who had found that motivational orientations were predictive of behavioral persistence.

For this study, information was gathered by questionnaires which measured the participant's perceived autonomy and competence regarding the course. After completion of the course, the students were asked to complete questionnaires assessing their intrinsic motivation and their intentions to study a similar course in the future.

Implications, and Strategies

Biddle, Goudas, & Underwood (1995) showed that intrinsic motivation was a

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strong predictor of intention, the likelihood of students taking future classes. The students' perceptions of autonomy at the beginning of the course were predictive of their intrinsic motivation: high perceived levels of autonomy predicted high levels of intrinsic motivation. However, perceived competence did not predict intrinsic motivation and it had an indirect effect on intrinsic motivation through performance, as in the grade received for the class. This supported previous findings of Deci and Ryan (1985), which showed that perceived autonomy is a more critical factor for intrinsic motivation than perceived competence.

This study showed the importance of creating perceptions of autonomy in learners when the promotion of intrinsic motivation is desired. When continued student involvement and behavioral persistence is required, the promotion of intrinsic motivation through autonomy is beneficial. One option for enhancing this sense of autonomy is to offer choices of different learning materials, such as an optional reading list. Allowing student teams to grade each other is another viable option. This peer evaluation offers students a degree of control over their learning processes.

Keller (1979)

Keller's (1979) theory of motivation, performance, and instructional influence incorporates cognitive and environmental variables in relation to effort, performance, and consequences. According to Keller (1979), motivation is the "heart" (p. 390) of our understanding of how to design of instruction. In addition, effort is a direct indicator of motivation and that people are more or less motivated by the intensity or persistence of a behavior.

Keller's (1979) Expectancy-Value Theory asserts that there are four basic categories of motivational conditions that the instructional designer must understand in order to produce instruction that is interesting, meaningful, and appropriately challenging. These are interest (curiosity) and relevance, which refer to the "Value" term in the Expectancy-Value theory; and expectancy which refers to "Expectancy" term. Outcomes, also called satisfaction, refers to the use of feedback, reinforcement, and other intrinsic and extrinsic consequences of behavior with respect to motivation.

Interest: concept and strategies

Keller (1979) defines interest as a condition that exists when there is an unexpected or inconsistent event in the perceptual environment, or there is gap between a given and desired state of knowledge--whether the learner's curiosity is aroused, and whether this arousal is sustained appropriately over time. Keller (1979) feels that interest is more likely to be maintained if the students engage in activities that allow them to act on their curiosity by exploring and manipulating their environment. One must feel comfortable about the consequences of taking risks before a great deal of curiosity will be exercised. Keller (1979) suggests several strategies to increase the learner's interest:

1. Use abrupt changes in presentation or paradoxical situations. Attention is aroused when there is an abrupt change in the status quo or presented with problem solving situations (p. 401).

2. Use anecdotes and other devices for injecting a personal, emotional element into otherwise purely intellectual or procedural material (p. 402).

3. Allow opportunities for the student to learn more about things they already

know about or believe in, but also allow moderate doses of the unfamiliar and unexpected (p. 402).

4. Use analogies to make the strange familiar and the familiar strange (p. 403).

5. Guide students into a process of question generation and inquiry (p. 405).

Relevance: concepts and strategies

Sustained motivation requires the learner to perceive that important personal needs are being met by the learning situation. Personal motivation will increase with increases in the perceived likelihood of a task to satisfy a basic need, motive, or value. Keller (1979) categorizes relevance into several value categories with some strategies to increase relevance:

Personal-Motive Value.

The personal-motive value suggests that increased value, or motivation, results when a given task or goal is perceived to offer satisfaction of a particular need or motive. Several strategies will assist the instructor in enhancing this value in the learner.

1. To enhance achievement-striving behavior, provide opportunities to achieve standards of excellence under conditions of moderate risk (p.408). An example of this may be to allow students to feel that all responses given in answer to questions by the instructor, or within the confines of a discussion, to be valid and of worth.

2. To make instruction responsive to the power motive, provide opportunities for choice, responsibility, and interpersonal influence (p.410). An example of this may be to allow for contract grading in a classroom situation or to offer various grade requirements that the students may pick from to achieve their grades.

3. To satisfy the need for affiliation, establish trust and provide opportunities for no-risk, cooperative interaction (p.412). An example of this may be to allow for a non-threatening, personal interaction between instructor and student: open office hours; availability by phone and E-mail.

Instrumental-Value.

Instrumental-value refers to the increase in motivation to accomplish an immediate goal when it is perceived to be a prerequisite step for attaining a desired future goal. A strategy to be used by the instructor is to have students identify their future goal and to determine where in the progression to this goal, the present circumstance falls. This will allow the student to gain a point of reference with respect to where they are on the attainment of the goal.

Cultural-Value

Cultural-value is the influence that parents, peers, organizations, and the culture at large have on motivation. Keller (1979) states that personal motivation increases when a desired goal is perceived to be consistent with the values of these cultural reference groups. An instructor may not be able to affect this value statement and it's relevance to the student. However, having the student determine where the present circumstance falls in relation to any cultural influence may help the student clarify their goals.

Expectancy: concept and strategies

Expectancy is the belief that a person's attitudes towards success or failure have a causal influence on actual events. It involves two concepts: expectancy of others, which is the teacher's (or other professional's) belief that he or she can bring about the desired

change (for example, can the teaching strategies used increase the learner's intrinsic motivation) and expectancy of oneself, which is the effect of personal expectancies on ones own behavior. These personal expectancies are effected by the concepts of locus of control, personal causation, and learned helplessness. According to Keller (1979) personal motivation will tend to increase with increases in personal expectancy for success.

Keller (1979) suggests several strategies related to expectancy:

1. Increase expectancy for success by increasing the student's experience with success (p. 418). An example of this may be to offer several grades to be averaged for the final grade and not base the final grade on two or three interim grades.

2. Increase expectancy for success by using strategies that indicate the requirements for success (p. 419). An example of this may be to for the instructor to make student expectations clear at the beginning of the class.

3. Increase expectancy for success by using techniques that offer personal control over success (p.420). An example of this may be allowing students to rewrite papers and/or tests to achieve a higher grade.

4. Increase expectancy for success by using feedback and other devices that help students connect success to personal effort and ability (p. 420).

Outcomes or Satisfaction: concept and strategies

Outcomes include several factors that affect the satisfaction of goal accomplishment and the motivation to continue pursuing similar goals. Keller (1979) assumes that both intrinsic and extrinsic outcomes follow a given performance. The extrinsic outcomes result from environmental conditions, and the intrinsic outcomes result

from one's internal emotions and evaluations in response to the performance, the extrinsic consequences, and the relationship between them. Keller (1979) states that the results of this cognitive evaluation feed back to motives and values, and thereby influence the motivation to continue to persist in the same kind of activity.

Keller (1979) comments that a number of researchers have concluded that for some types of activity, extrinsic reinforcement can decrease intrinsic motivation. To develop and maintain personal motivation for a given activity, use reinforcement, but do it in such a way that the controlling influences do not detract from the intrinsic satisfactions (outcomes). This conclusion was substantiated by Enzel, Wright , & Redondo (1996) whose research concluded that adult educators may unintentionally undermine intrinsic motivation by focusing too heavily on extrinsic incentives.

Keller (1979) suggests several strategies that can be used to maintain intrinsic satisfaction with instruction:

1. Use unexpected, noncontingent rewards (p. 425). An example of this may be an unexpected dismissal of class before class time ends, not as a result of the class completing a task.

2. Use verbal praise and informative feedback rather than threats, surveillance, or external performance evaluation (p. 426).

In addition, Keller (1979) suggests the following strategies to maintain or improve student performance in relation to satisfaction with performance:

3. To maintain quantity of performance, use motivating feedback following the response (p. 427).

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4. To improve the quality of performance, provide formative (corrective) feedback when it will be immediately useful, usually just before the next opportunity to practice (p. 427).

Bohlin, Milheim, and Viechnicki (1993)

The underlying theory base for this prescriptive model for the design of motivating instruction for adults comes from two arenas -- adult learning theory and instructional design. Bohlin, Milheim, and Viechnicki (1993) based their research on the works of John Keller (1979, 1987) and his studies on motivation. The research of John Keller (1979), in which a theoretical model based on the learner's interest, relevance, expectancy and outcomes, and his research (1987) in which his theoretical model was redefined into a model based on attention, relevance, competence and satisfaction (ARCS), supplied a framework for the design of the model by Bohlin, Milheim, and Viechnicki (1993).

The integration of adult learning theory and the ARCS model provide the theoretical framework for this adult motivation model. This integration was analyzed through needs-assessment instruments based upon the literature in both theory bases.

Two needs assessment instruments were developed by revising the Course Interest Survey (CIS) by Keller and Subhiyah (1987). The new instruments were developed to measure appeal of instruction (Course Interest Survey, Revised [CISR]) and the self reported effort of the learner (Course Effort Survey, Revised [CESR]). The instruments were designed to measure respondents' perception of their instructional needs related to instructional appeal and learner effort. Both of the studies reviewed used adults in educational settings to determine the their interest and effort and the relationship to the

ARCS model. With some slight variation, both studies concluded that in the areas of interest and effort, it was shown that the requirements for success need to be made clear to the student, the information learned needs to be of use to the student, and the student must receive a benefit from the class.

Implications and Strategies

The implications of this research are that an adult-learner/instruction-interaction motivation model has been developed that can be applied to the design of educational technology systems. Focusing on the needs of the adult learner as outlined below, and creatively designing interventions, feedback, and program structures will make the learning more appealing and the learner more confident. There are a number of instructional strategies identified by the work of Bohlin, Milheim, and Viechnicki (1993) that are rated as having a positive effect on the interest and/or effort of the subjects:

1. Determine the learners' expectations and goals and focus instruction to meet those goals. An example of this would be the use of the CISR and CESR or Motivated Strategies for Learning Questionnaire (MSLQ), see Appendix.

2. Assign projects that personally benefit the learners and provide for practical applications of learning

3. Make instruction nonthreatening and allow for flexibility in instruction and requirements.

4. Stress the usefulness of learning, arouse curiosity.

5. Clarify requirements for success in the class.

6. Build the learners' confidence

7. Provide timely and corrective feedback (p. 12-13).

The CISR or the CESR can be used as a needs assessment instrument. This can be especially useful if the content area is not intrinsically appealing or when designing a course for adults who may not give forth as much effort as desired.

Hancock (1995)

Hancock (1995) expanded the work of Vroom's (1964) Expectancy theory which suggests that the amount of effort a person exerts will ultimately depend on three perceptual relationships: expectancy, instrumentality, and valence. Hancock (1995) identified teacher actions for each component of the theory that would strengthen student's expectations that learning is accomplishable and will result in valued outcomes. These teacher actions will therefore enhance student motivation (effort) to learn academic course content.

Expectancy Theory: Definition and Strategies

The first component of Expectancy Theory (Vroom, 1964) is expectancy. Expectancy is the subjective estimation by a person of the likelihood that they will successfully perform a particular behavior. Hancock (1995) suggested that expectancy may be enhanced by offering additional instruction to the student. For example, providing a reference list of additional source material may provide depth to the student's understanding.

The second portion of Expectancy Theory is instrumentality. Hancock (1995) stated: "The theory then requires the person to assess the extent to which he or she perceives that his or her performance is instrumental in obtaining rewards and avoiding

adverse consequences" (p. 173). To influence a student's instrumentality, a teacher would need to insure the existence of rewards associated with learning. One such reward would be a grading system that clearly reflects the student's performance. Particularly important is the student's perception that rewards are distributed equitably.

The third portion of Expectancy Theory is valence. Valence is the positive or negative value that a person places on an outcome. According to Hancock (1995): "The teacher should first recognize a student's existing perceptions of various learning outcomes and attempt to relate those outcomes to the student's effort exerted toward learning" (p. 177). One way one might do this is to use a needs assessment tool such as the CISR and CESR or the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia & McKeachie, 1996) which measures various concepts involved in intrinsic motivation along with various other concepts, see Appendix.

Hancock (1995) concludes that no single framework captures all the variables which may influence student motivation (effort). Future research should conduct tests on each portion of Expectancy Theory with respect to recommended teacher behaviors. A primary goal would be to measure the impact of each recommended behavior on student motivation to learn in the classroom.

Bandura (1986) and Pajares (1996)

The Self-Efficacy Theory is psychological theory which researchers have identified as a tool to understand and promote the intrinsic motivation. However, self-efficacy is but one component of Bandura's Social Cognitive Theory (Bandura, 1986), which states that an individual's self-referent thought greatly affects their behavior, motivation and success

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at any given task. According to this cognitive theory, a person who perceives themselves to have a low-level of self-efficacy will, despite having the necessary potential, ability or skills, not perform well at carrying out a task, such as learning course material. One's perception of self-efficacy will affect the choices they make, the degree of effort they will expend on a task, the level of persistence they will employ at the task as well as how they will react to obstacles in the way of completing that task.

The self-efficacy component of Bandura's Social Cognitive Theory has been applied to many fields of studies on human thought, behavior, performance and motivation in recent years. Examples are addictions, pain tolerance, adherence to physical exercise programs, and career choices. However, of greatest interest to educators is self-efficacy theory's usefulness to anticipate and possibly influence student motivation and performance in learning. Pajares (1996) recently summarized the research on the potential Use Self-efficacy Theory in academic settings. As he notes, Self-Efficacy Theory sheds some light on the lack of motivation and failure that occurs when students are required to learn subjects in which many students often lack confidence about their ability to learn, such as mathematics, writing, science and computer courses. (Pajares, 1994, Compeau & Higgins, 1995, Gist, Schwoerer & Rosen, 1989)

Implications and Strategies

Research has identified that an accurate assessment of a learner's perception of their self-efficacy about a given subject will indeed predict their ability to successfully learn that material. If a learner's sense of self-efficacy can be increased, their likelihood of academically performing well in that class will also increase. Therefore, most recent

research is moving toward practical applications of this theory in educational settings. Some areas of recent studies include examining the relationship between self-efficacy and goals (Locke & Latham, 1990), between self-efficacy and feedback (Young & Kline, 1996) and between self-efficacy and performance in specific learning situations, such as learning computer software.

Some teaching strategies that have emerged from the body of Self-Efficacy Theory research include:

1. Accurately assessing learners' perception of self-efficacy toward specific tasks prior to or at the beginning of a class. Before an instructor can attempt to influence self-efficacy, he must use assessment tools uniquely geared toward self-efficacy. (Such assessment could take place as a part of pre-testing in training.) Some samples of self-efficacy questionnaire questions are provided in the Appendix.

2. Providing opportunities for learners to experience success in the subject area early in the course. Smaller, immediate successes help to increase one's perception of self-efficacy.

3. Providing models for the behaviors instructors want learners to be able to master. This modeling could take many forms, such as live demonstrations, video demonstrations or simulations. Research reveals that people feel a greater probability that they can successfully do a task that they see others perform successfully.

4. Expressing encouragement and positive affirmation of the learners' efficacy to learn to the skills or material. While studies show this to be a lesser motivator than some of the other strategies, it still plays a part in influencing a student's perception of self-

efficacy.

5. Identifying other tasks which learners successfully accomplish that can relate to the type of skills and abilities needed to master the course material. Unfamiliarity and uncertainty can cause learner anxiety and stress, which can affect self-efficacy perceptions. Helping them to realize that they may have a greater efficacy that originally thought, can reduce anxiety.

Discussion

This aim of this paper was to examine various motivational theories and models to determine whether teaching strategies can impact intrinsic motivation. In doing so, various components or concepts of intrinsic motivation were revealed. These components were autonomy, expectancy, instrumentality, effort, interest, satisfaction, valence, relevance and self efficacy. In examining these concepts and the teaching strategies that are associated with them, it was determined that specific teaching strategies can have a positive effect on the various concepts related to intrinsic motivation.

Trying to reach the adult learner, who appears not to be motivated, is a frustrating and all too common experience for instructors. Students, or learners, are individuals. As a result, there is no one " best way" to present educational material, and a range of teaching strategies is needed. The ability of students to be self-directed is situational: the learner may be self-directed in one subject and dependent in another. Thus the instructor's purpose is to identify the learner's needs in regard to motivation and design teaching plans that encourages self- motivation. In this regard instructors must be aware of strategies that will positively affect motivation. Instructors should use a supportive approach that

reinforces learner willingness and enthusiasm. The natural motivation of the learner can be supported and facilitated by certain teaching strategies implemented by the instructors. Of the concepts relating to intrinsic motivation presented in this paper, and the learning strategies identified as applicable to each, many have various components that are similar in nature.

One concept that continually reappears in the noted studies is that of control. Biddle, S., Goudas, M., & Underwood, M. (1995) and Hancock (1995) consider the student's belief of control over his/her learning to essential to intrinsic motivation; Biddle, S., Goudas, M., & Underwood, M. (1995) identified this concept as Autonomy; Hancock (1995) described his concepts of individual control as Instrumentality and Expectancy; and Keller (1979) identified the concept as Expectancy. The teaching techniques allowing for student control from these studies were often different (but not opposing), but did offer similarities. Biddle, S., Goudas, M., & Underwood, M. (1995) and Hancock (1995) both felt that to offer choices of learning materials for alternatives for learning and ensure depth to course content was essential. However, Hancock (1995) also felt that insuring existence of rewards associated with learning also facilitated individual control. Keller (1979) listed several strategies that he felt would enhance expectancy stressing the use of techniques that offer personal control over success.

One's feeling of control within classroom situation also supports Bandura's (1986) concept of Self-efficacy which could be described as the students perception of their own ability to succeed within the classroom situation. Bandura (1986) and Pajares (1996) feel that providing opportunities for learner to experience success in the subject area early in

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the course supports Keller (1979) strategy for increasing Expectancy. It also supports Bohlin, Milheim, and Viechnicki's (1993) concept of Effort in which the student will put forth more effort in his learning experience if the instructor builds the learner's confidence. Bandura's (1996) Self-efficacy concept also supports Bohlin, Milheim, and Viechnicki (1993) in their concept of effort in which they feel clarification the requirements for success within a classroom situation will enhance the effort put for by the learner on his/her learning experience.

The teaching strategies defined by of Keller (1979) are supportive of his concept of Relevance, the utility of the information being taught, also overlaps the concept control. Keller (1979) suggests that providing for opportunities for choice and responsibility allows for the student an opportunity to mold the instructional material so that it's utility will most benefit the student. This also allows the student's control over the utility of the educational experience. Relevance also supports Hancock (1995) concept of valence; the value one may place on an outcome of an experience.

Bohlin, Milheim, and Viechnicki's (1993) model is in direct correlation with many Keller's (1979) and (1987) theory of motivation. Bohlin, Milheim, and Viechnicki's (1993), teaching strategies were similar to Keller in the way that both studies emphasized techniques to enhance motivation through increasing interest and effort. Keller (1979) concept of Expectancy, which allows increases self efficacy in the student, also agrees with Bohlin, Milheim, and Viechnicki's (1993) concept of effort in which both feel that building confidence and an atmosphere of trust enhances motivation in the learner.

The concept of Satisfaction proposed by Keller (1979) is in which the learner is

motivated by the perceived outcome of the experience is inherent in almost all of the other concepts noted. Whether a student feels he/she has control (autonomy) of the experience; or the ability (self-efficacy) to complete the work; or the belief of success (expectancy); or the interest to finish; or the willingness to put forth the effort, all affect the outcome of the experience and whether or not the student will feel satisfaction with that outcome.

In reviewing the concepts for similarities, several instructional strategies were also used repeatedly. Keller (1979) and Bohlin, Milheim, and Viechnicki's (1993) used several feedback strategies as a means to enhance their concepts of motivation. Keller (1979) and Bohlin, Milheim, and Viechnicki (1993) and Bandura (1986) and Pajares (1995) all suggested strategies which somehow affect the student's perceptions of a given situation. In addition, Bandura (1986)) and Panjara (1996), Keller (1979) and Bohlin, Milheim, and Viechnicki (1993) all address strategies that effect the students possibilities for success.

Conclusion

Although there are many different conceptual models and theories regarding intrinsic motivation, they are all very similar in concepts and ways to enhance intrinsic motivation in the learner. In the classroom, instructors need to design instruction which concentrate on facilitation and communication by using teaching strategies which enhance intrinsic motivation; supporting learners by augmenting skills they have already acquired. As facilitator of a class, the instructor's role would become not simply a that of teacher, but also as motivater. Instructors should monitor progress to ensure success and use teaching strategies to assist students in acquiring, or enhancing, the skills to be self-

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directing and self-monitoring. Self-directed, lifelong learning should be seen as the single most important outcome of a formal education for adults. The hypothesis tested in this paper, that teaching strategies positively impact intrinsic motivation, has been proven. Instructors need to examine the needs of the learner and promote motivation and self-direction through motivational teaching strategies.

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Appendix

Title of Questionnaire or Title of Concept	Contents/Measurements or Example	How to Obtain or Where Found
Motivated Strategies for Learning Questionnaire (MSLQ) Developed by: P. R. Pintrich D. A. F. Smith T. Garcia W. J. McKeachie	Measurement of : I. Value Components: • Intrinsic Motivation • Extrinsic Motivation • Task Value II. Expectancy Components • Control Beliefs • Self - Efficacy for Learning and Performance III. Affective Components • Test Anxiety IV. Cognitive and Metacognitive Strategies • Rehearsal • Elaboration • Organization • Critical Thinking • Metacognitive Self-Regulation	Address: 1323 School of Education 610 East University Ave. University of Michigan Ann Arbor, Mi. 48109 Telephone: (313) 763-1342

Title of Questionnaire or Title of Concept	Contents/Measurements or Example	How to Obtain or Where Found
Motivated Strategies for Learning Questionnaire (MSLQ), continued	V. Resource Management Strategies • Time and Study Environment • Effort Regulation • Peer Learning • Help Seeking	
Course Interest Survey Revised (CISR) and Course Effort Survey Revised (CESR) Developed by: R. M. Bohlin, W. D. Milheim, and K. J. Viechnicki	Measurement of Interest and Effort as they relate to the ARCS model of Motivation: 1. Attention 2. Relevance 3. Confidence 4. Satisfaction	Examples of the CISR and the CESR can be found in: the Bohlin, Milheim and Viechnicki articles listed in the reference section. Requests for further information may also be addressed to: Roy M. Bohlin Department of Curriculum and Teaching California State University at Fresno Fresno, Ca. 93740- 0002

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General Self Efficacy Scale	Measures Self-Efficacy (Not all scholars agree that Self-efficacy can be assessed by a broad scale)	See Sherer, Maddux, Mercandate, Prentice-Dunn, Jacons, & Rogers, (1982).
Self-Efficacy Constructs	Examples are found in Table on pages 548-549.	See Compeau & Higgens (1995).
Self -Efficacy Beliefs	Table found on pages 543-548 provides examples of how self-efficacy questions are formed in various subjects	See Pajuras (1996).